AMENDMENTS TO THE CLAIMS

1-36. (Canceled)

37. (Currently Amended) An impurity doping method for semiconductor wherein a crystal layer made of crystal raw materials is doped with impurities, comprising:

a supply of different doping types of impurity raw materials at close timings in a pulsed manner within one cycle wherein all types of said crystal raw materials are supplied in one time each in the case when plural types of said crystal raw materials are alternately supplied in a pulsed manner with maintaining each of predetermined purge times~~.~~;

wherein an acceptor level of said semiconductor having a deep band gap becomes shallow, since the complex probability of three atoms increases by applying the tendency that the atoms easily move around on a surface of said crystal and a molecular state acceptor which is obtained by associated two acceptors and a donor is produced.

38. (Previously Presented) The impurity doping method for semiconductor according to claim 37, wherein

said different doping types of impurity raw materials being supplied at close timings in a pulsed manner either at the same time of, or after starting a supply of predetermined types of crystal raw materials as well as before starting a supply of the other predetermined types of crystal raw materials within said one cycle.

39. (Previously Presented) The impurity doping method for semiconductor according to claim 38, wherein

said different doping types of impurity raw materials comprises a first impurity raw material of a first doping type and a second impurity material of a second doping type being different to the first doping type, which are supplied at close timings in a pulsed manner either at the same time of, or after starting a supply of a first crystal raw material as well as before starting a supply of a second crystal raw material within one cycle wherein said first

and second crystal raw materials are supplied in one time each in the case when said first crystal raw material is supplied alternately with said second crystal raw material in a pulsed manner with maintaining each of predetermined purge times.

40. (Previously Presented) The impurity doping method for semiconductor according to claim 39, wherein:

a supply of said first impurity raw material is started in synchronous with starting a supply of said first crystal raw material, a supply of said second impurity raw material is started after finishing the supply of said first impurity raw material, and

the supply of said second impurity raw material is finished before starting the supply of said second crystal raw material.

41. (Previously Presented) The impurity doping method for semiconductor according to claim 39, wherein: there is a period of time wherein said first impurity raw material is supplied with said second impurity raw material at the same time.

42. (Previously Presented) The impurity doping method for semiconductor according to one of claims 37 to 41, wherein:

a crystal raw material supplied precedently within said one cycle in said crystal raw materials is at least one member selected from the group consisting of Ga, Al, In, B, Zn, and Cd, while a crystal raw material supplied latterly within said one cycle is at least one member selected from the group consisting of N, As, P, S, Se, and Te.

43. (Previously Presented) The impurity doping method for semiconductor according to claim 42, wherein:

said different doping types of impurity raw materials are a p-type impurity raw material and an n-type impurity raw material.

44. (Previously Presented) The impurity doping method for semiconductor according to claim 43, wherein

said different doping types of impurity raw materials are comprised of (Cp)2Mg being a first impurity raw material and TESi being a second impurity raw material,

said plural types of crystal raw materials are comprised of TMGa being a first crystal raw material and NH3 being a second crystal raw material;

said cycle comprises the steps of:

(a) supplying TMGa and (Cp)2Mg at a first timing,

(b) finishing the supply of TMGa and (Cp)2Mg at a second timing at which the supply of TMGa and (Cp)2Mg for a predetermined period of time was completed;

(c) supplying TESi either immediately after, or after the second timing at with the supply of TMGa and (Cp)2Mg was finished.

(d) finishing the supply of TESi at a third timing at which the supply of TESi for a predetermined period of time was completed;

(e) supplying NH3 either immediately after, or after the third timing at which the supply of TESi is finished,

(f) finishing the supply of NH3 at a fourth timing at which the supply of NH3 for a predetermined period of time was completed;

(g) starting a predetermined purge time after the supply of NH3 at the fourth timing at which the supply of NH3 was completed,

(h) finishing said predetermined purge time at a fifth timing; and

said cycle being repeated a desired number of times.

45. (Withdrawn and Currently Amended) A semiconductor material comprising a crystal layer with different doping types of impurities being disposed closely with each other in said crystal layer at a predetermined ratio~~.~~;

wherein an acceptor level of said semiconductor having a deep band gap becomes shallow, since the complex probability of three atoms increases by applying the tendency that

the atoms easily move around on a surface of said crystal and a molecular state acceptor which is obtained by associated two acceptors and a donor is produced.

46. (Withdrawn) The semiconductor material according to claim 45, wherein said crystal layer is made of Ga and comprises Mg and Si being different doping types of impurities, which are disposed closely with each other in said crystal layer made of Ga at a predetermined ratio.

47. (Withdrawn and Currently Amended) An impurity doping system for semiconductor wherein a crystal layer made of crystal raw materials is doped with impurities, comprising:

a reaction tube to the interior of which is disposed a substrate;

a plurality of pipes being designed for supplying raw material gases of the crystal raw materials and being designed for supplying raw material gases of impurity raw materials into said reaction tube, respectively;

gas valves mounted on said plurality of pipes, respectively;

a flow rate setting means being designed for setting out each flow rate of the raw material gases of said crystal raw materials and the raw material gases of said impurity raw materials flowing through said plurality of pipes, respectively, to a predetermined value;

a heating means being designed for heating said substrate disposed inside said reaction tube; and

a control means for being designed for controlling closing motions of said gas valves,

flow rates set out by said flow rate setting means,

heating of said substrate by means of said heating means, and

a supply of the raw material gases of said crystal raw materials and of the raw material gases of said impurity raw materials into said reaction tube through said pipes at predetermined timings, respectively, in a pulsed manner~~.~~;

wherein an acceptor level of said semiconductor having a deep band gap becomes shallow, since the complex probability of three atoms increases by applying the tendency that

the atoms easily move around on a surface of said crystal and a molecular state acceptor which is obtained by associated two acceptors and a donor is produced.

48. (Withdrawn) The impurity doping system for semiconductor according to claim 47, wherein said plurality of pipes comprises

a first pipe being designed for supplying NH3 gas into said reaction tube together with H2 gas being a carrier gas;

a second pipe being designed for supplying TMGa, (Cp)2Mg, and TESi into said reaction tube together with H2 gas being a carrier gas; and

a third pipe being designed for supplying N2 gas being a carrier gas into said reaction tube;

said gas valves are mounted on said first, second, and third pipes, respectively;

said flow rate setting means sets out each flow rate of gases flowing through said first, second, and third pipes, respectively, to a predetermined value; and

said control means controls a supply of NH3 gas in said reaction tube through said first pipe, a supply of TMGa, of (Cp)2Mg, and of TESi into said reaction tube through said second pipe, and a supply of N2 gas into said reaction tube through said third pipe at predetermined timings, respectively, in a pulsed manner.